REMARKS

Claim Status

The original application as filed included claims 1-18. A First Office Action was mailed on November 25, 2003, in which claims 1-3, 6-8, and 11-13 were rejected, and claims 4, 5, 9, 10, 17, and 18 were objected to but said to be allowable if rewritten in independent form. A response to the First Office Action was filed on May 20, 2004 in which Applicants amended the specification and drawings, and made amendments to the claims to correct minor typographical errors. A Final Office Action was mailed on July 6, 2004, maintaining the rejections and objections noted above.

A Request for Continued Examination was submitted on October 1, 2004 in conjunction with an Amendment and Response in which independent claims 1, 6 and 14 were amended. An Office Action was mailed on December 13, 2004.

Applicants submit this Amendment and Response in response to the Office Action of December 13, 2004, after which claims 1-18 will remain pending in this application, with claims 1, 6, and 14 as independent claims. In this Amendment, Applicants have redrafted dependent claims 4, 5, 9, 10, 17 and 18 in independent form. Applicants also amend independent claims 1, 6 and 14, support for which can be found in the specification at least, for example, at paragraph [0024]. No new matter has been added.

Claim Objections

The Examiner's indication of allowable subject matter in claims 4, 5, 9, 10, 17 and 18 is noted with appreciation. Applicants have redrafted these claims in independent form,

incorporating the limitations of the base claim and any intervening claims, and therefore submit that they are now in condition for allowance.

Claim Rejections Under 35 U.S.C. § 103(a)

In the currently pending Office Action, claims 1-3, 6-8, and 11-16 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over U.S. Patent No. 6,631,210 to Mutoh ("Mutoh") in view of U.S. Patent No. 5,502,793 to Ng ("Ng").

Applicants respectfully traverse this rejection. Mutoh is directed to a method for "discrimination between character areas and mesh areas as well as the discrimination between black areas and white areas." Mutoh, Abstract lines 21-24. Ng is directed to a system for "performing edge enhancement of low resolution binary image files" in order to "reduce the tangential gradient magnitude (jaggedness) of lines or text within a printed image while preserving the gradient angle (shape of the line or text) without sacrificing the normal gradient magnitude (sharpness of the line or text)." Ng, col. 1 line 65 through col. 2 line 8.

Both Mutoh and Ng describe using adjacent pixels sets that are two-dimensional. Mutoh uses image data "with 7 lines and 8 bits from the line memory as inputs" and "binarizes the image data C in an area centered on the target image." Mutoh, col. 34 lines 33-37. More specifically, the calculations carried out in the edge detection circuit of Mutoh use "a cross-shaped area ACONV centered on the target pixel" and include pixel information "on the j row" and "the i column." Mutoh, col. 36 lines 21-28. Similarly, Ng describes determining "the gradient angles of the pixels contained within [the] window" "to produce a gradient magnitude map" having both a horizontal and vertical component. Ng, col. 2 lines 29-30, and col. 4 lines

22-23. More specifically, Ng refers to using a "9x9 window of data retrieved from the original binary bitmap" to identify a single vertical line. Ng, col. 5 lines 26-29.

With regard to amended claims 1, 6 and 14 and their dependents, Applicants respectfully suggest that neither Mutoh or Ng, alone or in combination, teaches or suggests calculating a non-linear statistic using pixel data along a pixel line segment to determine whether the line segment should be treated as text or graphics during image processing, as claimed in independent claims 1, 6 and 14. By using pixel information along a line segment, Applicants' system eliminates the need for determining a necessary window size or configuration as described in Mutoh and Ng, and reduces the amount of data necessary to make such calculations. Furthermore, by processing the image on a line-by-line basis, Applicants' system can distinguish individual line segments as part of a text area or graphics area, whereas Mutoh and Ng are restricted to processing a two-dimensional portion of the image according to calculations made on those portions.
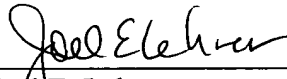
As such, Applicants respectfully submit that both Mutoh and Ng, either alone or in combination, fail to teach or suggest each and every element of Applicants' independent claims 1, 6 and 14 as well as those claims that depend directly or indirectly therefrom.

CONCLUSION

In view of the foregoing, Applicants respectfully request reconsideration, withdrawal of

all grounds of rejection, and allowance of claims 1-18 in due course. The Examiner is invited to

contact Applicants' undersigned representative by telephone at the number listed below to

discuss any outstanding issues.   ·

Respectfully Submitted,

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